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(56) Documents Cited

GB 2266045 A GB 2226014 A GB 1048459 A
GB 0529438 A US 5186347 A

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(54) Drinking/feeding devices for babies and young children

(57) A vessel for babies or young children, for example a feeding bottle or drinking cup, incorporates a flow restrictor 16 (Fig 1) or 26 (Fig 4) which comprises a liquid-retaining or liquid-restraining mass or layer which restricts liquid flow from the vessel. The flow restrictor may be sponge material in the form of a removable insert arranged to be fitted within the teat 12 (Fig 1) of a feeding bottle or within the spout 24 (Fig 4) of a feeding cup. The action of the flow restrictor is to prevent continuous flow of liquid from the vessel but to permit the flow of liquid in response to a sucking action.

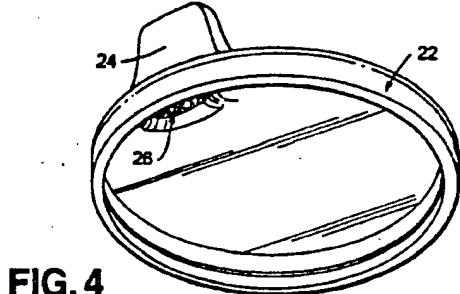
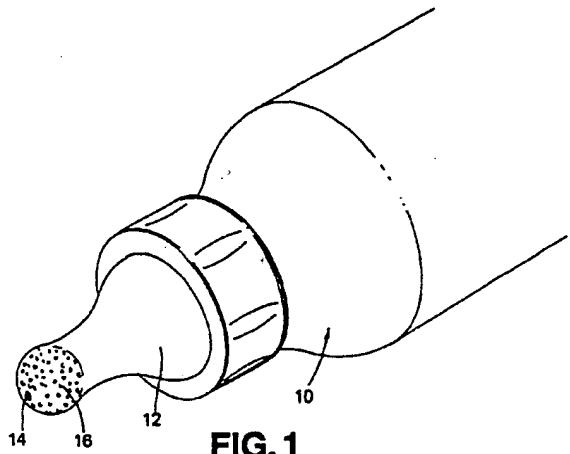


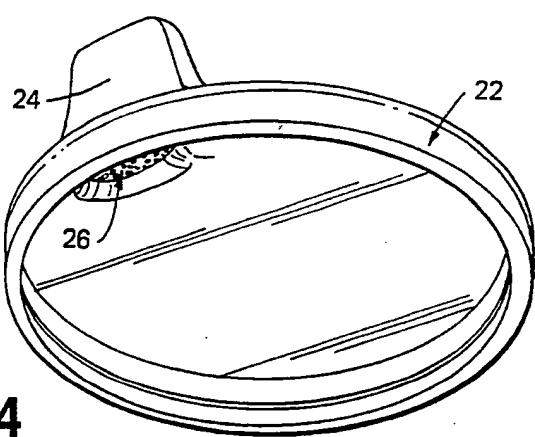
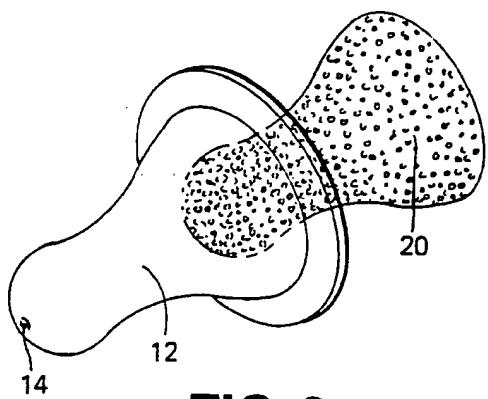
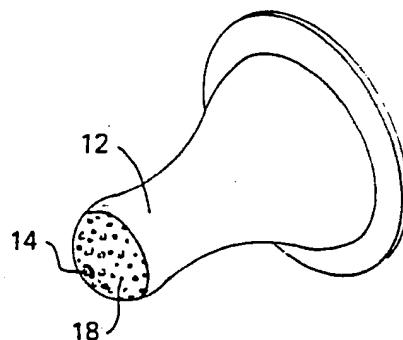
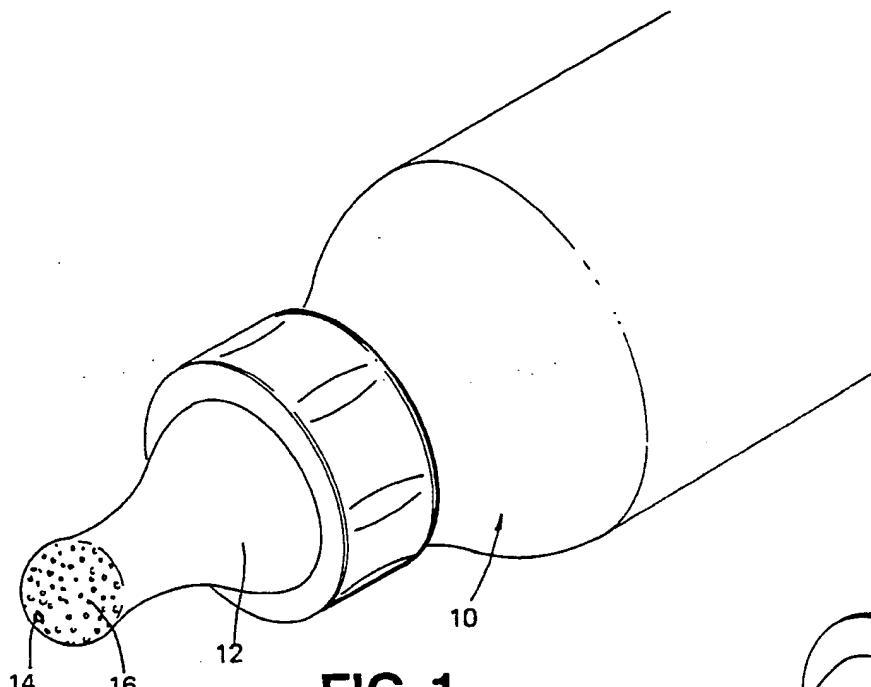
FIG. 4

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At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1990.

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DRINKING/FEEDING DEVICES FOR BABIES AND YOUNG CHILDREN

This invention relates to drinking and/or feeding devices for babies and young children.

5 One problem with babies' feeding bottles is that the contents tend to dribble out of the teat when the bottle is inverted. A similar problem arises in the case of drinking cups with spouts used by small children.

10 It is an object of the present invention to provide an improved drinking and/or feeding device for babies or young children in which this problem is overcome or at least substantially reduced. In other words, it is an object of the invention to prevent 15 uncontrolled dripping of liquid from a baby's feeding bottle or from a child's feeding/drinking cup.

20 Broadly in accordance with the present invention this is achieved by incorporating a flow restriction means into the teat of a feeding bottle or into the cap/top of a feeding/drinking cup, the flow restriction means comprising a liquid-retaining mass or layer which restricts liquid flow by surface tension.

25 In accordance with one preferred embodiment of the invention the flow restriction means comprises a sponge insert arranged to be fitted within the tip of a teat of a feeding bottle or within a spout of a feeding cup.

30 As an alternative to a sponge material one could alternatively use a mesh which is permeable but capable of retaining liquid.

35 The invention may alternatively be broadly defined as the provision in a baby's feeding bottle or child's drinking cup of a layer or mass of material which restricts continuous flow of liquid therethrough but which will permit the flow of liquid in response to

a sucking action.

In order that the invention may be more fully understood, a number of embodiments in accordance with the invention will now be described briefly by way of example and with reference to the accompanying drawings. In the drawings:

Fig. 1 shows part of a baby's feeding bottle with a sponge insert within the teat in accordance with the invention;

Fig. 2 shows an alternative embodiment in which the sponge is in the form of a layer insert within the teat;

Fig. 3 shows a further variation where the whole of the teat is filled with a sponge insert; and,

Fig. 4 shows the cap or top of a feeding cup where the spout can be screened with a sponge or mesh in accordance with the invention.

Fig. 1 shows part of a baby's feeding bottle 10 which is fitted with a teat 12 of rubber or like material. The teat 12 has a hole 14 at the end in the customary way. Inside the tip of the teat is fitted a sponge insert 16. The sponge insert 16 may be removable or may be fitted permanently within the teat. If removable, the sponge insert can be retained within the tip of the teat by the provision for example of a rubber annulus behind the sponge insert.

Fig. 2 shows a variation in which the sponge is in the form of a layer 18 behind the hole 14 in the teat. In this case it is preferable for the sponge layer to be permanently fitted to the inside of the teat.

Fig. 3 shows a further variation in which a sponge insert 20 is provided in the form of a sponge mass which substantially fills the whole of the cavity inside the teat. Again, the insert 20 can be removable

or fixed permanently within the teat. As yet a further alternative, the insert 20, instead of being "solid", can be a hollow element, i.e. essentially of layer form but shaped to match the configuration of the teat.

5 The primary advantage of the device according to the invention is that the sponge material collects and retains liquid at the point of discharge from the teat. The liquid is only released by a sucking action on the teat. This means that if the bottle is tipped, 10 thrown or discarded, the liquid will remain in the bottle and will not drip or spill from the bottle.

15 The device of the invention has additional advantages. As well as ensuring that there is no dripping, it does also assist in the controlled flow of liquid from the feeding bottle. The sponge insert will also assist in maintaining the generally cylindrical shape of the teat in use. The insert will also assist in the provision of an unrestricted flow of liquid. In other words, there will be no excessive deflection of 20 the teat which could cause air to be trapped and thus limit the flow of liquid. The sponge insert and/or the teat fitted with such an insert, can be manipulated, sterilised and washed without difficulty.

25 Sponge is a suitable material because of its natural ability to retain liquid due to surface tension. The particular type of sponge for this purpose will be dependent upon its ability to retain liquid and then release the liquid upon a sucking action being exerted. The correct density of sponge 30 will need to be determined in relation to air permeability in order to produce the best flow.

35 Although sponge is considered to be the preferred material, alternative materials could be used either to fill or partially fill the teat cavity or to constitute a mesh or layer at least in the vicinity of

the hole in the end of the teat. Various materials can be produced in mesh form and used to cover the hole 14. If a material is produced in mesh form, it could be affixed to the exterior of the teat provided that such 5 fixing is permanent and could not be removed by the sucking action. However, it would be preferable to provide such a mesh within the teat.

Fig. 4 shows part of a child's feeding/drinking cup. There is shown the cap or top 22 which includes a spout 24. The cavity of the spout 24 is filled or sealed in accordance with the invention by sponge or a mesh whose position is indicated by arrow 26 and which has a good air permeability but is also capable of retaining liquid. The sponge or mesh within the spout can be removable, interchangeable or permanent. Again, the sponge or mesh can readily be cleaned and sterilised either by washing or by immersion in a suitable sterilising liquid.

The references herein to "sponge" are 20 intended to include both natural sponge and also artificial sponge materials. The term in question is to be understood to be a generic term which is indicative of the characteristics of the material rather than its origin. It must be a material which 25 will absorb liquid and retain liquid but yet release liquid when the article with which it is associated is sucked.

CLAIMS:

- 5 1. A drinking/feeding vessel for babies or young children which incorporates flow restriction means comprising a liquid-retaining or liquid-restraining mass or layer which restricts liquid flow from the vessel.
- 10 2. A vessel as claimed in claim 1, in which the flow restriction means comprises sponge material.
- 15 3. A vessel as claimed in claim 2, in which the sponge material is in the form of an insert arranged to be fitted within the teat of a feeding bottle or within a spout of a feeding cup.
- 20 4. A vessel as claimed in claim 3, in which the insert is removable.
- 25 5. A vessel as claimed in claim 3 or 4, in which the insert is a layer configured to match the internal shape of the teat or spout.
- 30 6. A vessel as claimed in claim 3 or 4, in which the insert is a mass which substantially fills the whole of the cavity inside the teat or spout.
7. A vessel as claimed in claim 1, in which the flow restriction means comprises a permeable mesh.
8. A drinking/feeding vessel for babies or young children which incorporates a layer or mass of material which restricts continuous flow of liquid therefrom but which will permit the flow of liquid from the vessel in response to a sucking action.
9. A drinking/feeding vessel for babies or young children, substantially as hereinbefore described with reference to the accompanying drawings.

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Patents Act 1977
Examiner's report to the Comptroller under Section 17
(The Search report)

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Relevant Technical Fields		Search Examiner G NICHOLLS
(i) UK Cl (Ed.N)	B8T (TWG TMA TDAX) A4A (ALG ALM ALN)	
(ii) Int Cl (Ed.6)	A61J 11/00 A47G 19/22	Date of completion of Search 9 JANUARY 1995
Databases (see below)		Documents considered relevant following a search in respect of Claims :- 1-9
(i) UK Patent Office collections of GB, EP, WO and US patent specifications.		
(ii) ONLINE: WPI		

Categories of documents

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| X: | Document indicating lack of novelty or of inventive step. | P: | Document published on or after the declared priority date but before the filing date of the present application. |
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| A: | Document indicating technological background and/or state of the art. | &: | Member of the same patent family; corresponding document |

Category	Identity of document and relevant passages		Relevant to claim(s)
X	GB 2266045 A	(HABERMAN) see especially Figures 1-4	1, 8
X	GB 2226014 A	(JEX) whole document	1, 8
X	GB 1048459	(KENDALL) whole document	1-3, 5, 6, 8
X	GB 529438	(EVANS) whole document	1, 8
X	US 5186347	(FREEMAN) whole document	1, 8

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